PILOT ROCK ASSOCIATION (PWSNO 1280223)
SOURCE WATER ASSESSMENT REPORT

January 14, 2003

State of Idaho
Department of Environmental Quality

SOURCE WATER ASSESSMENT FOR PILOT ROCK ASSOCIATION

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Pilot Rock Association, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Pilot Rock Association* describes factors used to assess the susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use inside the delineation boundaries, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Pilot Rock Association is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Well Construction. The Pilot Rock Association water system serves a residential neighborhood on the west side of Lake Coeur d'Alene. A single 244-foot deep well provides drinking water for 17 connections. Most homes in the service area are used seasonally.

The Pilot Rock Association well was drilled in 1995 into a consolidated granite formation. The well casing and seal terminate in granite 19 feet below the surface. The well is lined with PVC that is perforated from 184 to 204 feet and from 224 to 244 feet. The well produced 40 gallons per minute when it was developed, with 25 gallons per minute coming from a layer of a black and brown granite 97 to 99 feet below ground. The static water level was 47 feet below ground surface with a drawdown to 75 feet after 4 hours of pumping. The system was mostly in compliance with the *Idaho Rules for Public Drinking Water Systems* when it was inspected in 1999. Correspondence in the public water system file for Pilot Rock indicates that required repairs were completed the following month.

Well Site Characteristics. Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zone delineated for your well. Soils in the well recharge zone for the Pilot Rock Association wells are generally classed as poorly drained to moderately well drained which mean that they impede migration of contaminants toward the wells. The well log shows only 3 feet of fractured material above the first water bearing stratum 81 to 83 feet below the surface.

Potential Contaminant Inventory. The 1000-foot radius recharge zone delineated for the Pilot Rock Association well covers a wooded area that has been developed for seasonal housing. Roads crossing the delineation boundaries carry light volume local traffic, and were not counted as significant potential sources of contamination. About 35 per cent of the delineated area is submerged, but surface water was discounted as a potential contaminant source since the well is on the hillside and above the flood plain. Homes in the Woodland Shores service area have individual septic tanks.

Water Quality History. Pilot Rock Association had total coliform bacteria Maximum Contaminant Level violations in 1999 and 2000. A cross connection between the potable water and irrigation water systems may have been responsible for the 1999 incident. Spring water flowing over an air relief valve may have caused the contamination in September 2000. Repairs to eliminate the suspected sources of contamination were undertaken quickly. All quarterly samples since have been negative for total coliform. Annual nitrate tests show concentrations ranging from 0.027 to 0.051 mg/l. The Maximum contaminant level for nitrate is 10 mg/l.

Susceptibility to Contamination. An analysis of the Pilot Rock Association well, incorporating information from the public water system file, well log, and the potential contaminant inventory, ranked the well at low risk relative to all classes of regulated contaminants. Incidents of microbial contamination appear to be confined to the distribution system and do not reflect contamination of the ground water. The complete analysis worksheet for your well is on page 6 of this report. Formulas used to compute final scores and susceptibility rankings are at the bottom of the worksheet.

Source Water Protection. This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Continuing to operate and maintain the well in full compliance with *Idaho Rules for Public Drinking Water Systems* is the most important drinking water protection tool available to Pilot Rock Association. There are a number of voluntary measures the Association can implement as well. Every system should develop an emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website (http:// www.deq.state.id.us/water/water1.htm) to guide systems through the emergency planning process.

Drinking water protection partnerships with landowners in the recharge zone should also be established. Some of them may not be aware that their property is in a sensitive area where household practices could have a negative impact on public drinking water supplies. The Pilot Rock Association should promote ground water stewardship programs like Home*A*Syst among its members. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality.

Topics include petroleum product storage, septic system maintenance, handling and storing lawn and household chemicals and similar activities. Cross connection control should also be emphasized to avoid contamination of the drinking water system with lake water used for irrigation. Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

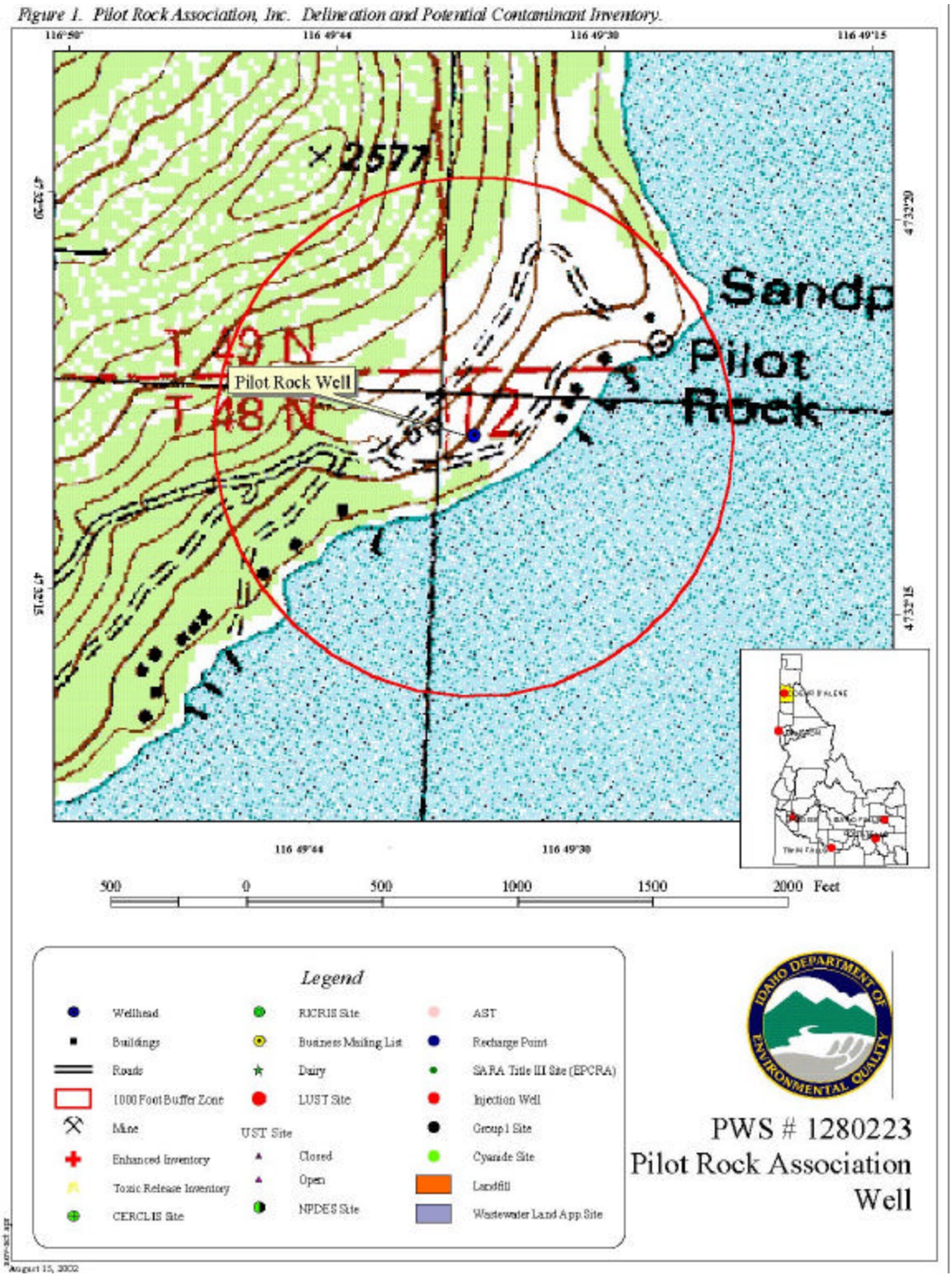
Assistance. Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: http:// www.deq.state.id.us/water/water1.htm

Figure 1. Pilot Rock Association, Inc. Delineation and Potential Contaminant Inventory.



Ground Water Susceptibility

Public Water System Name : **PILOT ROCK ASSN INC** Well : **WELL #1**

Public Water System Number : **1280223** 11/19/02 8:15:24 AM

1. System Construction		SCORE			
Drill Date	9/15/95				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	0			
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		**1**			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	NO	0			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		**3**			
		IOC	VOC	SOC	Microbial
3. Potential Contaminant / Land Use		Score	Score	Score	Score
Land Use	Rural Residential	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score		**2**	**2**	**2**	**2**
Potential Contaminant / Land Use - 1000-FOOT-RADIUS					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or Microbials	NO	0	0	0	
4 Points Maximum		0	0	0	
1000-Foot-Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot-Radius	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - 1000-Foot-Radius		**0**	**0**	**0**	**0**
Cumulative Potential Contaminant / Land Use Score		**2**	**2**	**2**	**2**
4. Final Susceptibility Source Score		**5**	**5**	**5**	**5**
5. Final Well Ranking		Low	Low	Low	Low

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility
6 - 12 Moderate Susceptibility
> 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.